

Presentation to the State Information Technology Advisory Committee (SITAC)



Presented by: Lisa Feldner, CIO
Information Technology Department

March 25, 2008
Project Room/Lecture Room A – State Heritage Center

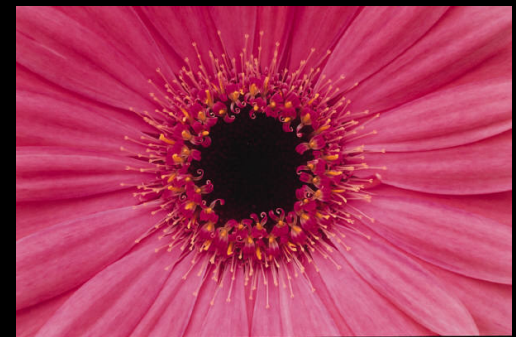
CIO UPDATE

Lisa Feldner, CIO
Information Technology Department



CONNECTND UPDATE

Pam Sharp, Director
Office of Management & Budget



ConnectND – Initiatives

- PeopleSoft Applications
 - Finance
 - Human Capital Management
 - Portal
- Business Intelligence / Data Warehouse

ConnectND – Finance

- Financial application 9.0 Upgrade
 - Upgrading from version 8.4 to 9.0
 - Oracle product support
 - End user training
 - Go Live – May 13, 2008

ConnectND – Finance

- Following the Financial Upgrade
 - Employee Expense module
 - Ach email notification to Vendors
 - V-payment (ach, p-card or check) to Vendors

ConnectND – HCM Initiatives

- Absence Management project
 - Online leave requests
 - Display current leave balances
 - Includes workflow, approvals & status
 - Pilot Agencies; Tax, Supreme Court, BND, NDPERS, WSI and OMB
 - Contracting with Ciber Inc.
 - Project start date – April, 2008

ConnectND – Portal

- Resource Finder project
 - Employee Directory – Employee Contact info
 - Retrieve data already entered in HR app
 - Stay in Sync with Active Directory
 - Employee update capability requested

Kingsley, Donna

*Name:

View By:



Contact Information

Contact Preference:

Business Phone:

Cell:

Fax:

Email:

[Bosworth, Randy](#)

Kingsley, Donna

[Bradley, Cynthia](#)

[Cummings, Tanya](#)

Business Information

Title:

Company: [ABC Refrigerator](#)



Department: [Research and Development](#)



Manager: [Bosworth, Randy](#)



Product Expertise

Find First 1-1 of 1 Last

Name	SKU	Retail Price	Sale Price	Status	Number in Stock	
CG-6 Curved Glass Merchandiser	CG-6	\$750	\$660	In Stock	2	Delete

[Add](#)

Project Assignments

Find First 1-1 of 1 Last

Name	
Big Grocery Display Upgrade	Delete

[Add](#)

ConnectND – Portal

- Resource Finder project's next steps;
 - Define scope of functionality
 - Determine additional agencies that elect to participate

BI/DW – PeopleSoft Fin & HCM

- Business Intelligence/Data Warehouse
 - User Friendly/intuitive tool to access and view data
 - Apply application security
 - Report archiving
 - Adhoc reporting capability

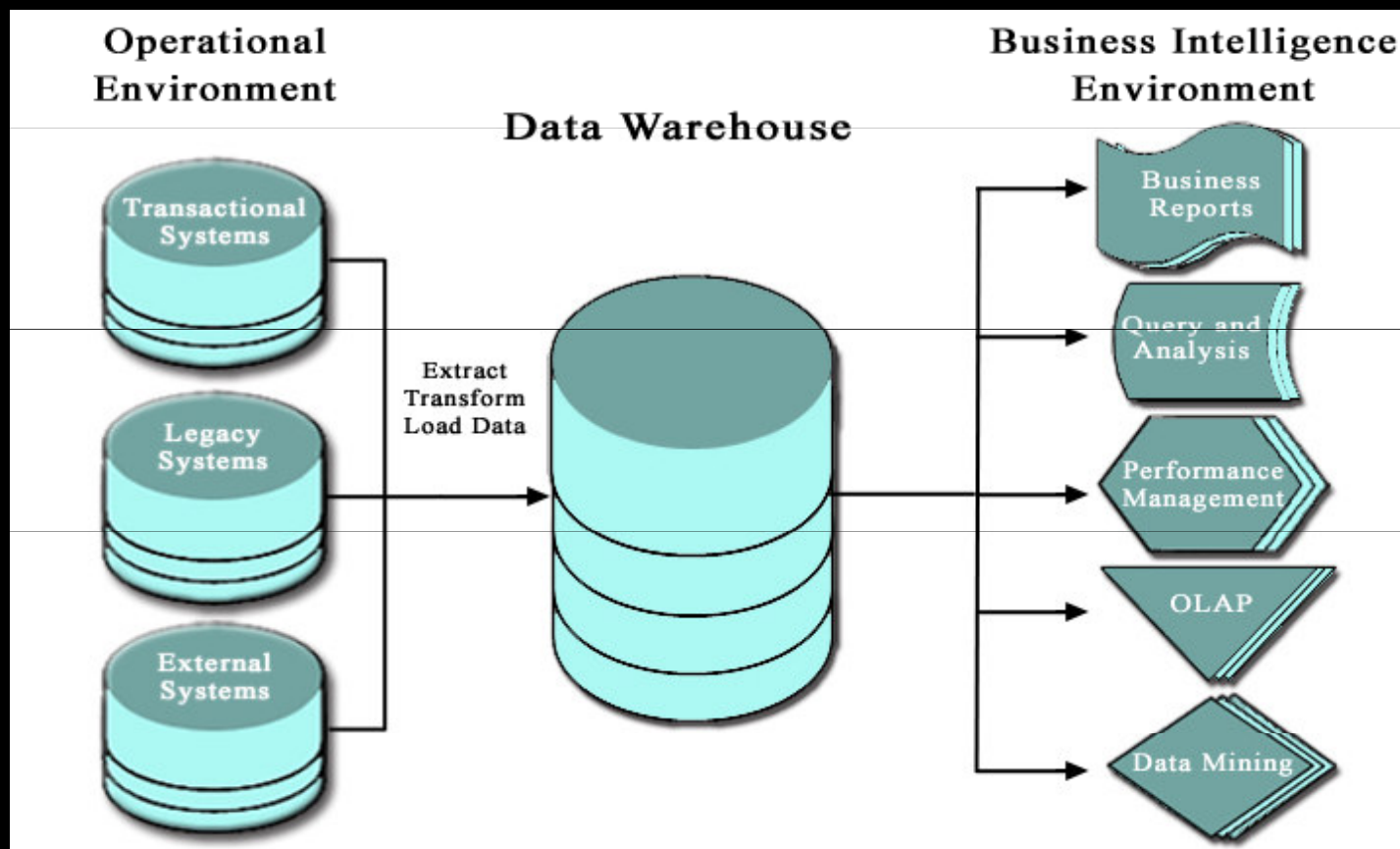
BUSINESS INTELLIGENCE ARCHITECTURE

Tracy Korsmo, Business Intelligence Architect
Information Technology Department



BI Architecture 3 Components

- BI Software
 - Reporting, Analytics, Dashboards and KPI
- Data Integration Software
 - Tools used for extracting data from one or more systems, cleaning, transforming and loading the data into a warehouse (ETL)
- Data Warehouse
 - Physical storage of transformed data



ND BI Architecture History

- 2006 Ciber BI Assessment
 - Recommended software and hardware to establish and adopt standards on enterprise products comprising BI software, data integration and data warehouses
- ND Proof of Concept
 - Validated Ciber Recommendations
 - Established direction for enterprise BI components

BI Software Standards

- ND BI Software Vendor
 - Cognos – primary enterprise software
 - SAS – special situations requiring data mining, predictive analytics, text mining and geospatial data
 - Unable to negotiate reasonable enterprise pricing
 - SAS on the Mainframe will not migrate
 - ITD will provide agencies using SAS on the MF with individual desktop versions for agency users responsible for analytical analysis today

BI Current Market Events

- Since Ciber's Recommendations
 - Over 18 of 30 some BI vendors have been purchased in an industry consolidation
 - Infrastructure and application vendors (Oracle, IBM, Microsoft, SAP) are merging BI into their architectures and eliminating pure-play BI vendors
 - The data integration (ETL) and DW architectures continue to migrate into the RDBMS architectures
 - Consolidation Effects: future pure-play BI vendors will be left to specialty companies

At a Glimpse

- SAP acquiring Pilot Software, Outlooksoft and Business Objects;
- Oracle acquiring PeopleSoft, Siebel and Hyperion;
- Microsoft acquiring Proclarity (and the release of their Performance Point Sever);
- SAS announced a strategic partnership with Teradata (just separated from NCR);
- Cognos acquiring Adaytum, Frango, Celequest, Applix

At a Glimpse

- IBM buys Cognos
- 2007 alone MS, Oracle, SAP and IBM collectively moved from owning < 25% of the market to 65% of the space
- Rumor of MS SAP Buyout (Business Objects)

BI Software Future Decisions

- Cognos remains the Enterprise selected BI tool
 - Strong product and provides ease of use to the end users
 - Risk: IBM will integrate Cognos into their WebSphere suite and give less priority to upgrades outside their architecture
 - Challenge: Today licensing of Cognos is limited to internal state usage and does not allow delivery to the public at this time
- Industry Lessons Learn (Gartner/ TDWI)
 - Do not choose a BI vendor and force the product to fit all BI initiatives
 - Purchase and Extend when possible – Building from scratch can cost 3.5X the cost and time of purchasing an existing application
 - Risk: With multiple BI vendors, leveraging the training of resources, both technical and business users, may be compromised

BI Future Decisions/ Trends

- Purchasing best of breed BI tools has been the current norm vs standardizing on a vendors stack of products, however this is changing as the balance shifts to infrastructure vendors (Oracle, MS,IBM, SAP)
- Gartner
 - Develop a policy that promotes BI standardization efforts, but at the same time is flexible enough to account for best of breed requirements, may be a balanced and pragmatic approach for your organization

BI EE Architecture Review

- Oracle BI enterprise architecture is being evaluated
 - Oracle Insight
 - Siebel (BI tool), Oracle DW and Oracle ETL
 - Oracle is currently integrating their existing products with the purchases made in the last few years
 - Oracle has indicated that some of their existing offerings (EPM for PeopleSoft) will transition to their new purchases
 - 2010 before Oracle completes their integration of the productions purchased into a cohesive BI offering called 'Fusion'

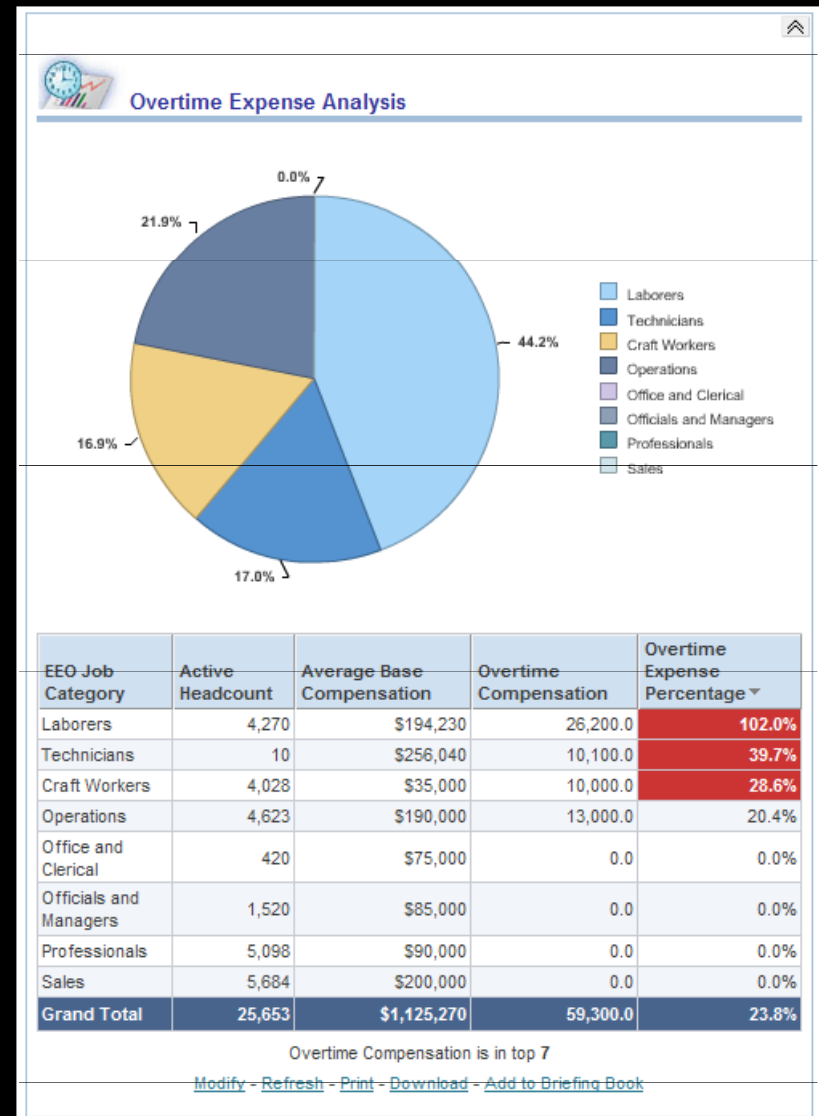
Oracle BI analytic applications

Came from purchase of Siebel

Suite of pre-built BI applications including Fin and HR

Connectors to PeopleSoft

Oracle currently performing a gap analysis of the OBIA applications and ND PeopleSoft reporting needs



Data Warehouse Platform

- Ciber Recommendations
 - Consider Netezza data appliance (state-wide)
 - Integrates db, server and storage for 10-100X performance
 - Not practical given the States current BI initiatives
 - Begins to payoff at the TB levels of data, we are not there
 - Oracle 10g or higher
 - RAC (Real Application Cluster)
 - Single DB deployed across a cluster of servers
 - Lower cost commodity hardware
 - High Available, Scalable, lower-cost computing

ND Strategy 10g -11g

- Ability to grow and eventually support critical applications
- RDBMS vendors have been incorporating DW into their architecture for years and continue to increase the size and scalability, potentially ND may never need an appliance or not need for another generation or 2 of their offerings

Data Integration

- Software used for extracting data from one or more systems, cleaning, transforming and loading the data into a warehouse (ETL)
- Importance of Data Integration
 - Gartner estimates that 50% of IT costs are associated with data integration and 90% of those costs are associated with lack of metadata (data definitions from source systems)
 - Oracle indicated that the data integration portion of developing a warehouse can reach 80% of the cost and time

Data Integration

- Ciber Recommendations
 - Informatica be adopted as enterprise ETL
 - Cadillac of Data Integration tools, legacy MF – Oracle, DB2, MS Sql – excel through flat files
 - Immediate Needs
 - Utilize lower cost applications
 - Oracle DW Builder (Part of Oracle Warehouse - free)
 - Utilize the ETL tools built into BI vendor products like Cognos

Future of ETL = Data Integration

- IBM, Oracle and Microsoft have purchased or built their own ETL tools, Informatica remains the leading pure-play ETL vendor not purchased. ETL is being replaced by Data Integration suites offered by these infrastructure and application vendors
- ETL functionality is merging to the RDBMS infrastructure and becoming a feature of a product line
- Gartner will not conduct a magic quadrant of ETL again

ETL challenges

- Meta data standards not being adopted
 - Cannot exchange meta data (data definitions) from one ETL product to another without purchasing specialized software
 - Ciber recommended 'MITI' metadata integration tool to facilitate the sharing of metadata between different BI and ETL vendors to provide centralized metadata management
 - ND will eventually need this type of product when it begins to build data warehouse and data marts that span BI applications built and deployed with different tools

ND Enterprise Data Integration Strategy

- Informatica – seek opportunity to establish enterprise licensing
 - Current licensing is restricted to MMIS
 - Expensive: Informatica offered state a deeply discounted offer in Dec and was still 400K
- Oracle – utilize whenever possible
 - Utilize Oracle DW Builder when building Oracle DW, which follows ND current direction
 - Utilize BI tools ETL when Federation is needed

ND Current BI Initiatives

- Workforce Safety
 - Currently initiating a project to replace their claims and policy systems utilizing a product with analytic reporting tools
- DHS MMIS Rewrite
 - Cognos currently being deployed to production for an early reporting initiative – Cognos will be used for ODS and Warehouse
- Treasurers Office
 - Cognos is being used for the reporting environment on their rewrite of Oil and Gas as well as their remaining applications - ODS
- Bank of ND
 - BND has indicated they will be moving from JReports to Cognos
- Multiple Agencies use Crystal Reports as their reporting tool
- ITD uses roughly 300 CR for web deployment and is evaluating replacing with Cognos

ND Resources

- Ciber recommend 5 resources to establish a statewide BCC
 - 2 resources have been identified
- Data Integrators
 - ITD: working on MMIS data translations with Informatica – knowledge transfer is under way
- Professional Cognos Developers
 - ITD: 1 sent to training more will be trained this spring
 - More training this spring
- Data Base
 - ITD is looking to expand its DBA staff with specialized DW skills
 - Initial projects will need to be supplemented with consultants
- Long Term the BI Competency Center should provide:
Methodologies, Training, Coordination and best practices for
agency BI initiatives

AGENCY PROJECT REPORTS





Break
Time



*HOW INDEPENDENT VERIFICATION AND VALIDATION (IV&V)
CAN HELP TO BUILD IN QUALITY*

*State of North Dakota, SITAC
MARCH 25, 2008*

IT Project Experiences

- 34% of IT projects are considered successful
- 15% of all IT projects fail
- 51% experience budget and schedule overruns – or lack critical features and requirements that make for a less than satisfactory outcome

-- The Standish Group Report

What is Quality?

- Meeting customers expectations

How does IV&V help meet customer expectations?

- Assuring the requirements are met
- Validate delivery of a useful product

What is IV&V?

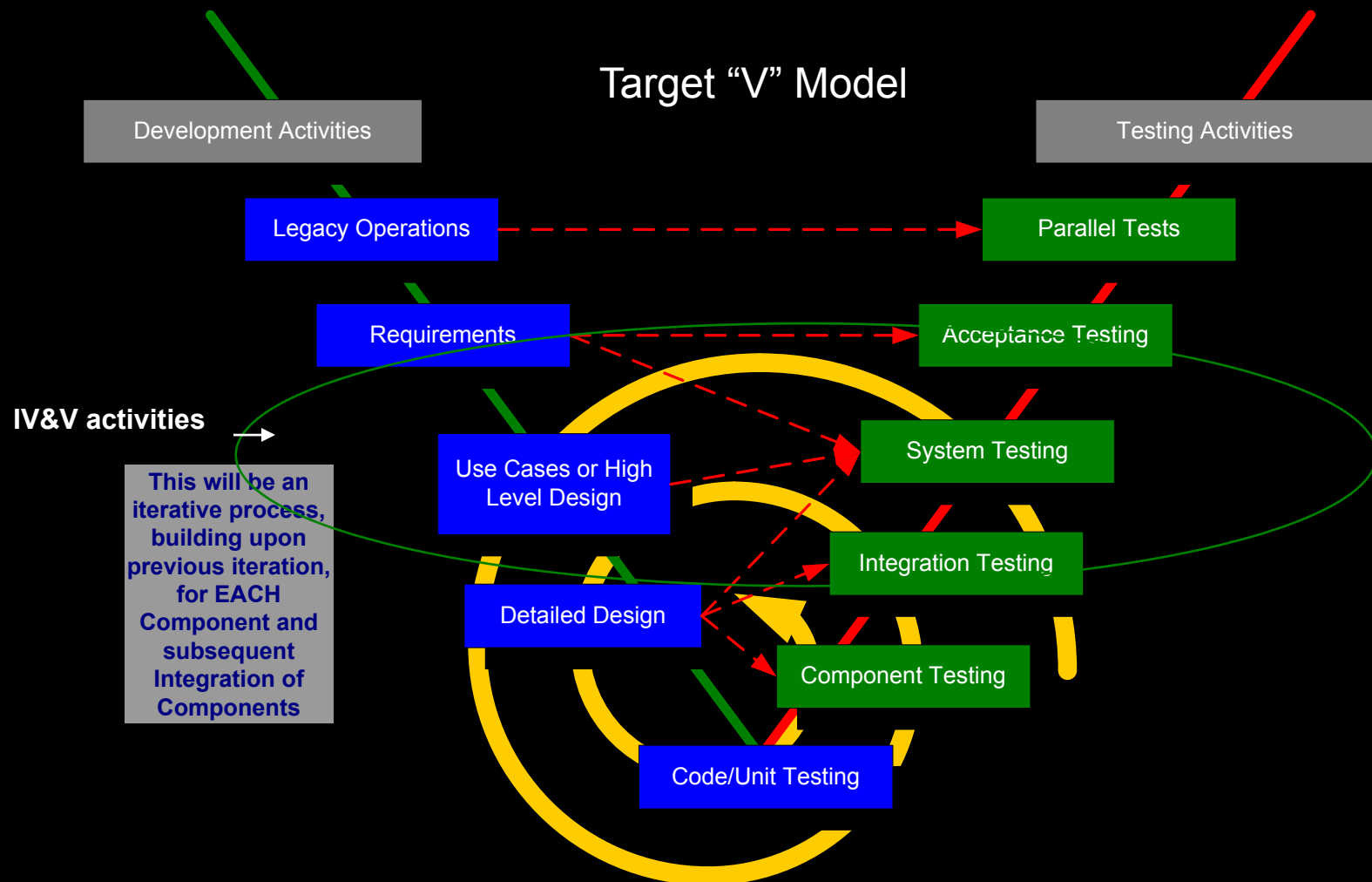
- Independent Verification and Validation (IV&V) is a systems development discipline that helps organizations/projects build quality into the software during the software life cycle.
- Verification is concerned with checking that the system is well engineered. Sometimes expressed as:
“Are we building the system right?”
- Validation is concerned with checking that the software developed meets the user's needs. Sometimes expressed as:
“Are we building the right system?”

Key Focus Areas for IV&V:

- Requirements Verification - Confirms the software and interface requirement specifications are consistent with the stated requirements in a way that is unambiguous, complete, consistent, testable (or verifiable) and traceable.
- Design Verification - Verifies that Design Specifications Documents (DSD) are consistent and reflect the requirements and needs of the project.
- Software Test Plan and Software Test Verification - Looks for effective test coverage. It is important to examine and verify traceability tables and document software requirements design artifacts.

- Implementation Verification - Verifies that approved standards/practices are followed such as for coding, documentation, naming, and data dictionary terms.
- Application Verification - Provides for the verification of adherence to Software Test Plans. Replication of some tests by IV&V helps ensure correctness. Perceived weaknesses in design and previously undetected errors are documented. Use of correctly defined stress tests validate the system functions in the targeted technical environment.
- Process Validation – Ensures that client standards and industry best practices are being employed to develop the product or execute the project.

Taken from: Unlocking the Benefits of IV&V
By Jim Gates



Emerging Perspective on IV&V:

- Utilized early in the project life cycle by assisting in defining scope and requirements and supporting procurement processes
- Delivery of viable and cost-controlled systems is the primary focus
- Provides a means for reducing risks
- Provide a technical discipline throughout the entire System Development Life Cycle
- Assist business and functional areas in redefining business process

Cost and Benefits of IV&V

- Typically 5 to 15% of development cost
- IV&V emphasizes early detection of defects
- Watch Dog Affect – IV&V involvement makes developer and project team more aware of quality issues
- Risk identification and awareness have a higher focus with IV&V
- IV&V can assist in making decisions around difficult alternatives related to schedule, cost and scope

Questions?

Presenter – Donald Moore, Project Manager

dmoore@systest.com

225-978-3381

Sponsor – Tim Walker, Vice President

Government Services

twalker@systest.com

303-575-6681

QUALITY ASSURANCE PROJECT STATUS

Vern Welder, Director
Software Development

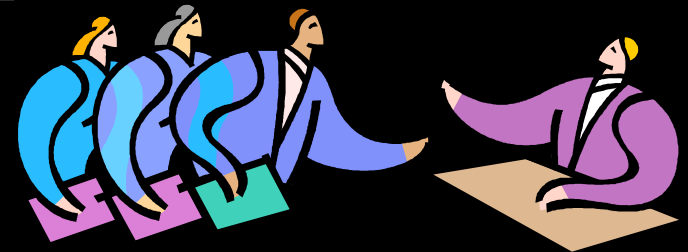


Quality Assurance Project Status

- History
 - Audit Recommendation
 - 2006 - 2007 Division Strategy - Pursue Formal Q/A Process
 - 2007 Legislature allowed 3 FTEs for Q/A at ITD

Quality Assurance Project Status

- Accomplishments to Date
 - Released an RFP for Consulting Assistance
 - Selected SysTest Labs
 - Assessed our Current Methodology
 - Prepared a Recommendation



Quality Assurance Project Status

- Systest Labs Recommendation
 - Goal: Build and Monitor quality throughout the entire Software Development Life Cycle (SDLC)
 - Establish a Dedicated ITD Q/A Organization
 - Define and Implement a Test Protocol
 - Implement Q/C Metrics and Metric Monitoring
 - Implement Q/A into one SDLC Process and Extend into Others

Quality Assurance Project Status

- Moving Forward
 - Created Job Descriptions for Q/A Organization in Software Development
 - Hire a Q/A Manager and a Q/A Analyst
 - Create Q/A Environment
 - Do a Pilot
 - Implement across the Software Development Division

Quality Assurance Project Status

- Effects on Software Projects
 - Software Quality Entry and Exit Points may Change
 - We're Uncertain how Customer Involvement will Change
 - We're Uncertain about Project Cost
 - Testing Enhancements and Maintenance Changes will Become Easier.
 - We're Certain that Overall Quality will Improve

IT PLANNING CYCLE

Nancy Walz, Director
Policy & Planning Division



2009 – 11 IT Planning Briefing

- IT Planning Process and Key Dates
 - March 24th & 25th – Agency Briefings
 - March 27th – April 30th – Agency IT Plan meetings
 - April 7th – Governor's Budget Guidelines released
 - April 7th – BARS released for 2009-11 processing
 - Watch for email from OMB on downloading instructions
 - July 15th – IT Plans Due (Per NDCC no extensions are allowed)
 - August 1st – Large Project data delivered to SITAC
 - August ? – SITAC will rank large projects
 - October 30th – State IT Plan release to printer
 - December 1st – State IT Plan delivered to Legislature

2009 – 11 IT Planning Briefing

- Large Project Ranking
 - Proposed Changes in Scope
 - All projects over \$250,000 will be included
 - Projects will be grouped by purpose
 - Projects within each purpose will be ranked as
 - Critical
 - Essential
 - Important

ITD 2009-11 SERVICE RATES

Mike Ressler, Director
Information Technology Department



B- North Dakota

You might almost forgive a state for feeling a little complacent at a time when an oil-and-gas-price boom and an increasingly diversified economy have combined to provide a biennial budget 24 percent larger than the previous one.

But complacency isn't really part of North Dakota's governmental culture. The state has lived through enough boom-and-bust energy cycles to recognize that balloons are made to be burst. In line with their tradition of fiscal conservatism, budgeters here have used some of their extra cash to put \$200 million—about 8 percent of general-fund revenues—into the state's rainy day fund. That complements a number of other trust funds in which the state conserves cash to fund schools, health care and fiscal emergencies.

Aside from that, much of the windfall has gone toward one-time expenditures, including \$14 million on an integrated tax-information system that went live last year, replacing 40-year-old technology that was

Without making pay more competitive across the board, North Dakota will continue to struggle to fill positions.

inefficient and difficult to maintain. Plans also are underway for replacement of the state's 28-year-old, mainframe-based Medicaid management system.

In fact, there are quite a few areas of North Dakota government that could use some help right now. Blessed with the nation's lowest crime rate, North Dakota's Department of Corrections used to rent out excess beds to other states. Now, however, it is trying to cope with a rapidly growing prison population and overcrowded facilities, created in large part by drug offenses. A debate rages about whether to expand existing facilities or to build a new prison, but either way, the price tag will stretch into the tens of millions.

It may be easier to find the money for

new beds than to adequately staff the prison hallways. The department routinely receives approval for fewer positions than it needs. Pay levels are low, and turnover among correctional officers is edging up. In the last budget, lawmakers approved \$1.5 million for salary increases; the department had requested \$4.2 million.

In fact, salary levels pose a significant challenge across state government. In the last legislative session, lawmakers approved a package readjusting some of them to make the pay scale more consistent across agencies. Overall, though, compensation remains uncompetitive. Some states close that gap by offering generous benefit packages, but North Dakota falls behind there, too, with benefits worth about half as much as the nationwide average. Agencies do have some flexibility to offer higher starting salaries to attractive candidates, but without more competitive pay across the board, the state will continue to struggle to fill open positions.

Human resources management is largely decentralized in North Dakota, so some agencies have pushed ahead to address personnel needs on their own. The Department of Transportation, facing a pending crush of retirements, started a career-path initiative last year to help lower-level employees develop skills they will need to move up within the department. It's a program other departments would be well served to emulate. With the difficulty in finding new employees, North Dakota needs to try especially hard to make the most out of the ones it has, investing more to train and develop them for bigger, better jobs.

As for the state's infrastructure, the budget surplus has helped funnel new money toward maintenance; DOT bonded for two major maintenance projects in 2005. Building maintenance is still more than 50 percent underfunded, though, and routine roadway upkeep has been set back as a result of dramatic increases in the cost of asphalt. The department expects this year's assessment may show some decline in road-condition ratings as a result.

For additional data and analysis, go to pewcenteronthestates.org/gpp

● Strength ● Mid-level ● Weakness

Money B

- Long-Term Outlook ●
- Budget Process ●
- Structural Balance ●
- Contracting/Purchasing ●
- Financial Controls/Reporting ●

People C

- Strategic Workforce Planning ●
- Hiring ●
- Retaining Employees ●
- Training and Development ●
- Managing Employee Performance ●

Infrastructure B-

- Capital Planning ●
- Project Monitoring ●
- Maintenance ●
- Internal Coordination ●
- Intergovernmental Coordination ●

Information C+

- Strategic Direction ●
- Budgeting for Performance ●
- Managing for Performance ●
- Performance Auditing & Evaluation ●
- Online Services & Information ●

Population (rank): 635,867 (48)
Average per capita income (rank): \$22,619 (35)
Total state spending (rank): \$3,633,349,000 (49)
Spending per capita (rank): \$5,714 (15)
Governor: John Hoeven (R)
First elected: 11/2000
Senate: 47 members: 21 D, 26 R
Term Limits: None
House: 94 members: 33 D, 61 R
Term Limits: None

2009-11 Billing Rates

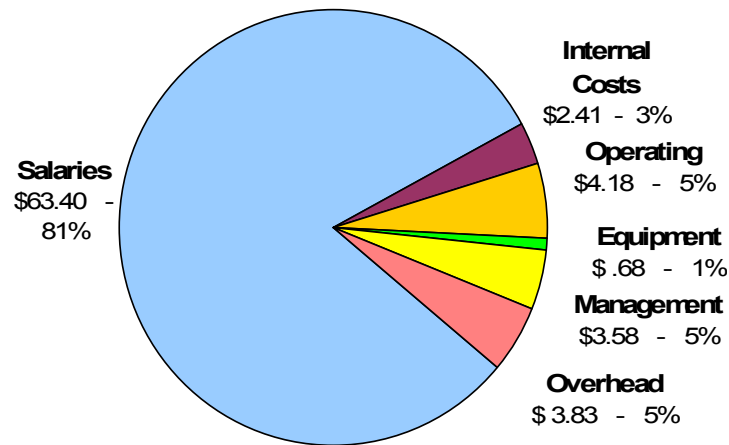
❖ Service Rate Increases:

Salary and Health Insurance Increase

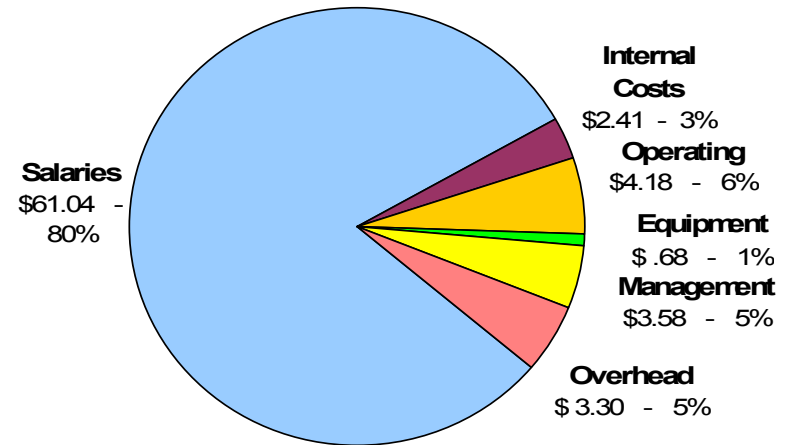
	2007-09	2009-11
<u>Service Description</u>	<u>Rate</u>	<u>Rate</u>
Architect	\$75.00	\$79.00
Senior Developer & Project Mgr III	\$63.00	\$75.00
Developer & Project Mgr II	\$63.00	\$69.00
Junior Developer & Project Mgr I	\$58.00	\$63.00

2009-11 Billing Rates

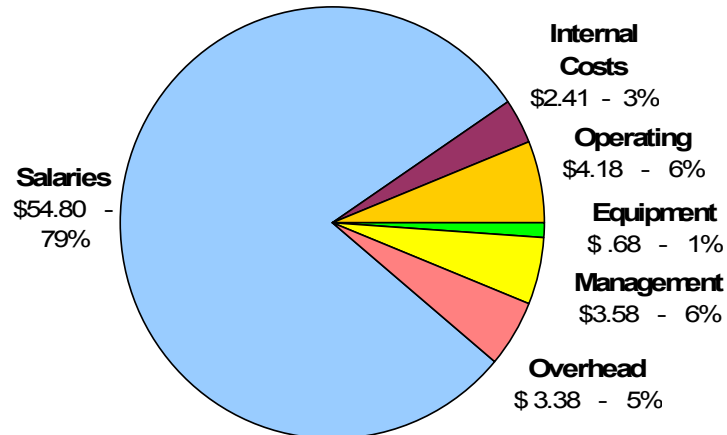
ITD Senior Programmer Analyst Costs
\$78.08 / Hour



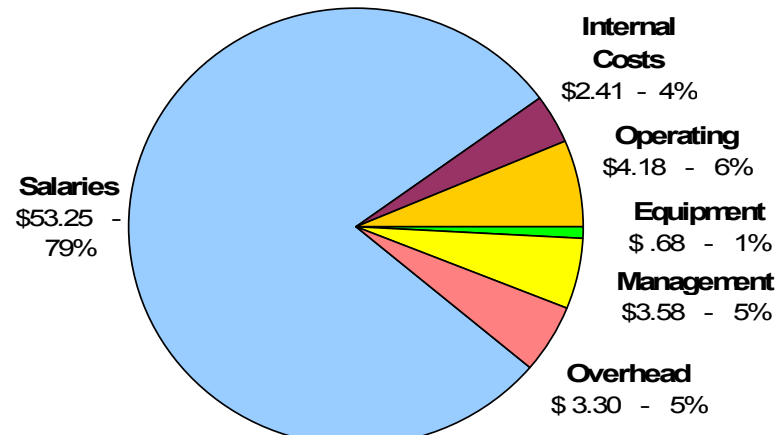
ITD Project Manager III Costs
\$75.60 / Hour



ITD Project Analyst III Costs
\$69.03 / Hour



ITD Project Manager II Costs
\$67.40 / Hour



2009-11 Billing Rates

❖ **Change in Recovering Network Costs:**
Currently Charging a Device Fee (\$30.75 /mo.)

Will Change To:

Charging a Technology Fee
(Will Be Based on Agency FTE)

*Thank
You!*

